

MAY
JUNE

LIST

1987

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May 17 Meeting

The May 17 meeting was held at Herb's Place. The meeting, as announced was a swap meet, and as such was well attended. All the participants enjoyed Herb's kind hospitality.

The first order of business was, as requested by Nazir Pashtoon, to relieve him of the LIST editorship. After long discussion, Mr. Joe Newman volunteered to take over the editor's job at least for the summer, starting with the July issue of LIST.

John Pazmino, who was at the Mid-West TS Fair, reported on the well attended fair and his observations. He delighted the participants by showing beautiful color slides of the fair. His presentation was a total success.

Finally, the swap portion of the meeting started, where a lot of hardware and software for the ZX81, TS2068, Spectrum, and QL changed hands.

Harvey Rait kindly volunteered his place for the June meeting. The meeting will be held at Harvey's Place, at 2:00 p.m. June 14.

LIST

LIST meeting of April 26, 1987

Our meeting was held at the home of Harvey R. in Valley Stream. Myles Cohen our President Pro-Tem presided.

The first order of business was to establish where and when it will be. It will be:

May 17 at the home of Herb Werthauer in Seaford L.I. 3763 Franklin Ave. Tel#516-221-7579

The June meeting will be on June 14 at a place as yet undecided.

The NYTSE group has officially decided to merge with LIST.

For members with the Zebra disc drives there is a newsletter put out by Dave Franson (Wisconsin) called T.O.P.S. (Timex Of Portugal Systems). Stewart Newfeld of Zebra will send the first newsletter at no charge to anyone that purchased their system from him. T.O.P.S. caters to CPM as well as non-CPM. Frank Toomey of Quantum Computing will be the source of Disciple interfaces. Frank had promised a substantial discount to LIST members but as of this date he has not honored this commitment.

A discussion was had concerning the best value for disc drive systems and included the Phillips and Mitsubishi drives. Bob Gilder will submit an article on drives. Many members who do not have disc systems have expressed a great interest in obtaining them but are holding off until it can be determined which system and interface offers the best value vs performance.

Stoney M. reported on the Trenton Fair that was attended by 3 LIST members as well as 3 from the Washington group. Speakers at the fair included Stewart Newfeld and Tom Bent.

Nazir P. because of scheduling problems announced that he can not put together our newsletter anymore and we need a replacement immediately. There is sufficient material for the newsletters but we need someone to put them together and get them printed commercially. Members have volunteered to collate and mail them out once they are printed. Are there any volunteers out there for editor?

Our May meeting by the way will have a SWAP MEET included, so bring all that marvelous STUFF that you find in excess to your needs and want to either sell or swap for different STUFF

LIST Tape#7.0 is available now. A full 60 minutes of interesting programs for the TS and Spectrum. The price schedule is as stated in previous newsletters which is : \$1.50 if picked up at the meeting; \$3.00 if ordered via mail and a program or newsletter item is submitted; \$6.00 without any submitted material. Please remember our policy of non-copyrighted material unless it is yours and you give us the permission to distribute it to members.

LET YOUR COMPUTER ASSIST THE BATHROOMSCALE

Steve Kaye

A PROGRAM FOR CALCULATING YOUR PERCENTAGE OF BODY FAT-BY STEVEN KAYE

WHEN YOU USE A BATHROOM SCALE IT CAN BE MISLEADING. IT DOES NOT TELL YOU WHETHER YOU ARE DEVELOPING MUSCLE OR JUST PUTTING ON MORE FAT. WHEN COMBINED WITH THE BATHROOM SCALE, YOUR TRUSTY LITTLE TINEX SINCLAIR COMPUTER CAN PROVIDE YOU WITH INFORMATION ON WHETHER THE EXTRA WEIGHT IS LEAN MUSCLE MASS OR JUST PLAIN FAT.

THE PROGRAM LISTED BELOW WAS DEVELOPED ON MY T/S 1000 FOR STUDENTS USING MANY DIFFERENT BRANDS OF MICROCOMPUTERS. IT WAS INTENTIONALLY WRITTEN WITHOUT ANY DIMENSIONED ARRAYS, GRAPHICS, OR OTHER FEATURES WHICH WOULD MAKE IT MACHINE SPECIFIC, IN OTHER WORDS; IT IS WRITTEN IN MY OWN VERSION OF UNIVERSAL BASIC.

THIS PROGRAM IS BASED UPON DATA OBTAINED FROM A MAJOR EXERCISE PHYSIOLOGY TEXT AND PROVIDES A RELATIVELY ACCURATE ALTERNATIVE TO THE PROCESS OF UNDERWATER WEIGHING WHICH IS OFTEN USED IN EXERCISE PHYSIOLOGY LABORATORIES. THE PROGRAM WORKS BECAUSE LEAN MUSCLE TISSUE HAS A HIGHER DENSITY THAN FAT. THEREFORE WHEN A PERSON IS WEIGHED UNDER WATER THE FAT TISSUE WEIGHS LESS THAN MUSCLE. THE DATA CONTAINED WITHIN THE PROGRAM IS BASED UPON UNDERWATER WEIGHING. TO USE THE PROGRAM SIMPLY LOAD IT INTO THE COMPUTER AND FOLLOW THE DIRECTIONS. YOU WILL NEED A TAPE MEASURE CALIBRATED IN INCHES TO PERFORM THE MEASUREMENTS.

RATING YOURSELFpercent body fatscore

5 to 10 percent	EXCELLENT
11 to 15 percent	GOOD
16 to 19 percent	FAIR
20 percent and over	POOR

PROGRAM LISTING

All data adapted from Exercise Physiology
- by William McArdle and Frank and Victor
Katch. 1981

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1 REM PROGRAM COPYRIGHT 1985
2 REM BY STEVEN KAYE-JAMES MA
3 DISON H.S.
4 SLOW
14 PRINT AT 10,8;"FIND YOUR EA
15 PRINT AT 11,9;"BY STEVEN KA
YE"
16 FOR Z=1 TO 100
17 NEXT Z
18 CLS
20 PRINT "TO USE THIS PROGRAM
JUST FOLLOW THE INSTRUCTIO
NS THAT APPEAR ON THE SCREEN

21 FOR I=1 TO 150
22 NEXT I
30 CLS
96 CLS
100 PRINT "ENTER YOUR SEX"
101 PRINT AT 4,0;"IF MALE ENTER
1"
102 PRINT AT 6,0;"IF FEMALE ENT
ER 2"
105 INPUT B
110 IF B=0 THEN GOTO 100
112 IF B=2 THEN GOTO 500
115 IF B>=3 THEN GOTO 100
120 CLS
125 PRINT "YOUR SEX HAS BEEN EN
TERED"
126 FOR I=1 TO 50
127 NEXT I
130 CLS
140 PRINT AT 4,0;"MEASURE THE D
IAMETER OF YOUR UPPER ARM ABO
UT MIDWAY BETWEEN YOUR
SHOULDER AND YOUR ELBOW, B
E SURE TO KEEP YOUR ARM STRAI
GHT WHILE MAKING THE MEASUREME
NT."
142 PRINT
144 PRINT "USE A TAPE MEASURE C
ALIBRATED IN INCHES. ENTER YOU
R UPPER ARM MEASUREMENT INT
O THE COMPUTER, ROUND OFF
YOUR NEAREST MEASUREMENTS TO THE
INCH."
145 INPUT MA
146 CLS

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LIST

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147 PRINT AT 4,0;"MEASURE THE D
IAMETER OF YOUR WAIST ABOUT
1/2 INCH ABOVE YOUR NA
VEL."
148 PRINT
150 PRINT "ROUND OFF THE MEASUR
EMENT TO THE NEAREST INCH AND
ENTER IT INTO THE COMPUTER."
154 INPUT MW
156 CLS
160 PRINT AT 6,0;"MEASURE THE D
IAMETER OF YOUR RIGHT FOREARM
, AT ITS WIDEST POINT BETWEEN
YOUR WRIST AND YOUR ELBOW."
164 PRINT
166 PRINT "ROUND OFF THE MEASUR
EMENT TO THE NEAREST INCH AND
ENTER IT INTO THE COMPUTER."
168 INPUT MF
170 CLS
201 IF MA<7 THEN PRINT "ARM MEA
SUREMENT IS TOO SMALL FOR THIS P
ROGRAM"
202 IF MA=7 THEN LET MAC=26
204 IF MA=8 THEN LET MAC=30
206 IF MA=9 THEN LET MAC=33
208 IF MA=10 THEN LET MAC=37
210 IF MA=11 THEN LET MAC=41
212 IF MA=12 THEN LET MAC=44
214 IF MA=13 THEN LET MAC=48
216 IF MA=14 THEN LET MAC=52
218 IF MA=15 THEN LET MAC=56
220 IF MA=16 THEN LET MAC=59
222 IF MA=17 THEN LET MAC=63
224 IF MA=18 THEN LET MAC=67
226 IF MA=19 THEN LET MAC=70
228 IF MA=20 THEN LET MAC=74
230 IF MA=21 THEN LET MAC=78
232 IF MA=22 THEN LET MAC=81
234 IF MA>22 THEN PRINT AT 5,0;
"ARM MEASUREMENT IS TOO LARGE
FOR THE PROGRAM"
236 IF MU<21 THEN PRINT AT 9,0;
"THE WAIST MEASUREMENT IS
TOO SMALL FOR THIS PROGRAM"
300 IF MU=21 THEN LET MWC=28
302 IF MU=22 THEN LET MWC=29
304 IF MU=23 THEN LET MWC=30
306 IF MU=24 THEN LET MWC=31
308 IF MU=25 THEN LET MWC=33
310 IF MU=26 THEN LET MWC=34
312 IF MU=27 THEN LET MWC=35
314 IF MU=28 THEN LET MWC=37
316 IF MU=29 THEN LET MWC=38
318 IF MU=30 THEN LET MWC=39
320 IF MU=31 THEN LET MWC=41
322 IF MU=32 THEN LET MWC=42
324 IF MU=33 THEN LET MWC=43
326 IF MU=34 THEN LET MWC=45
328 IF MU=35 THEN LET MWC=46
330 IF MU=36 THEN LET MWC=47
332 IF MU=37 THEN LET MWC=49
334 IF MU=38 THEN LET MWC=50
336 IF MU=39 THEN LET MWC=51
338 IF MU=40 THEN LET MWC=52
340 IF MU=41 THEN LET MWC=54
342 IF MU=41 THEN LET MWC=55
344 IF MU>41 THEN PRINT AT 9,0;
"THE WAIST MEASUREMENT EXCEEDS
THE CAPACITY OF THE PROGRAM."

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350 IF MF<7 THEN PRINT AT 12,0;
"FOREARM MEASUREMENT IS TOO
SMALL FOR THIS PROGRAM"
352 IF MF=7 THEN LET MFC=38
354 IF MF=8 THEN LET MFC=43
356 IF MF=9 THEN LET MFC=49
358 IF MF=10 THEN LET MFC=54
360 IF MF=11 THEN LET MFC=60
362 IF MF=12 THEN LET MFC=65
364 IF MF=13 THEN LET MFC=71
366 IF MF=14 THEN LET MFC=76
368 IF MF=15 THEN LET MFC=81
370 IF MF=16 THEN LET MFC=87
372 IF MF=17 THEN LET MFC=92
374 IF MF=18 THEN LET MFC=98
376 IF MF=19 THEN LET MFC=103
378 IF MF=20 THEN LET MFC=109
380 IF MF=21 THEN LET MFC=114
382 IF MF=22 THEN LET MFC=119
384 IF MF>22 THEN PRINT AT 12,0;
"FOREARM MEASUREMENT EXCEEDS
THE CAPACITY OF THE PROGRAM"
400 LET ST=MAC+MWC
404 LET ST2=ST-MFC
406 LET MBF=ST2-10
410 CLS
412 PRINT AT 6,0;"YOUR BODY IS
APPROXIMATELY "; " ";MBF;" P
ERCENT FAT"
413 FOR I=1 TO 50
414 NEXT I
415 LPRINT;"YOUR BODY IS APPRO
XIMATELY "; " ";MBF;" PERCENT F
AT"
420 GOTO 726
500 CLS
504 PRINT
506 PRINT "MEASURE YOUR WAIST D
IAMETER ABOUT 1/2 INCH ABOVE
YOUR NAVEL. USE A TAPE ME
ASURE CALIBRATED IN INCH
ES. ROUND OFF THE MEASUREMENT
TO THE NEAREST INCH AND ENT
ER YOUR WAIST MEASUREMENT IN
TO THE COMPUTER."
508 INPUT FW
510 CLS
512 PRINT AT 4,0;"MEASURE THE D
IAMETER OF YOUR RIGHT THIGH,
JUST BELOW YOUR BUTTOCKS."
514 PRINT
516 PRINT "ENTER YOUR THIGH MEA
SUREMENT"
518 INPUT FT
520 CLS
522 PRINT AT 6,0;"MEASURE THE D
IAMETER OF YOUR RIGHT FOREARM
, AT ITS WIDEST POINT BETWEEN
YOUR WRIST AND YOUR ELBOW."
524 PRINT
526 PRINT "ROUND OFF YOUR MEASU
REMENT TO THE NEAREST INCH AND
ENTER IT INTO THE COMPUTER."
528 INPUT FF
530 CLS
541 IF FU<20 THEN PRINT "WAIST
MEASUREMENT IS TOO SMALL FOR TH
IS PROGRAM"

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LIST

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042 IF FU=20 THEN LET FUC=27
044 IF FU=21 THEN LET FUC=28
046 IF FU=22 THEN LET FUC=29
048 IF FU=23 THEN LET FUC=30
050 IF FU=24 THEN LET FUC=31
052 IF FU=25 THEN LET FUC=32
054 IF FU=26 THEN LET FUC=33
056 IF FU=27 THEN LET FUC=34
058 IF FU=28 THEN LET FUC=35
060 IF FU=29 THEN LET FUC=36
062 IF FU=30 THEN LET FUC=37
064 IF FU=31 THEN LET FUC=38
066 IF FU=32 THEN LET FUC=39
068 IF FU=33 THEN LET FUC=40
070 IF FU=34 THEN LET FUC=41
072 IF FU=35 THEN LET FUC=42
074 IF FU=36 THEN LET FUC=43
076 IF FU=37 THEN LET FUC=44
078 IF FU=38 THEN LET FUC=45
080 IF FU=39 THEN LET FUC=46
082 IF FU=40 THEN LET FUC=47
084 IF FU=41 THEN LET FUC=48
086 IF FU=42 THEN LET FUC=49
088 IF FU=43 THEN LET FUC=50
090 IF FU=44 THEN LET FUC=51
092 IF FU=45 THEN LET FUC=52
094 IF FU=46 THEN LET FUC=53
096 IF FU=47 THEN LET FUC=54
098 IF FU=48 THEN LET FUC=55
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110 IF FU=54 THEN LET FUC=61
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146 IF FU=72 THEN LET FUC=79
148 IF FU=73 THEN LET FUC=80
150 IF FU=74 THEN LET FUC=81
152 IF FU=75 THEN LET FUC=82
154 IF FU=76 THEN LET FUC=83
156 IF FU=77 THEN LET FUC=84
158 IF FU=78 THEN LET FUC=85
160 IF FU=79 THEN LET FUC=86
162 IF FU=80 THEN LET FUC=87
164 IF FU=81 THEN LET FUC=88
166 IF FU=82 THEN LET FUC=89
168 IF FU=83 THEN LET FUC=90
170 IF FU=84 THEN LET FUC=91
172 IF FU=85 THEN LET FUC=92
174 IF FU=86 THEN LET FUC=93
176 IF FU=87 THEN LET FUC=94
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714 IF FU=356 THEN LET FUC=363
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774 IF FU=386 THEN LET FUC=393
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944 IF FU=471 THEN LET FUC=478
946 IF FU=472 THEN LET FUC=479
948 IF FU=473 THEN LET FUC=480
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984 IF FU=491 THEN LET FUC=498
986 IF FU=492 THEN LET FUC=499
988 IF FU=493 THEN LET FUC=500
990 IF FU=494 THEN LET FUC=501
992 IF FU=495 THEN LET FUC=502
994 IF FU=496 THEN LET FUC=503
996 IF FU=497 THEN LET FUC=504
998 IF FU=498 THEN LET FUC=505
1000 IF FU=499 THEN LET FUC=506

```

```

700 LET ST=FUC+FTC
702 LET ST2=ST-FFC
704 LET FBF=ST2-10
706 CLS
708 PRINT AT 5,0;"YOUR BODY IS
APPROXIMATELY ";FUC;"% FBF;" P
ERCENT FAT"
714 LPRINT;"YOUR BODY IS APPRO
XIMATELY ";FUC;"% FBF;" PERCENT F
AT"
720 FOR I=1 TO 50
722 NEXT I
726 CLS
730 PRINT AT 8,0;"DO YOU WANT T
O USE THIS PROGRAM AGAIN? (INPUT
Y/N)"
732 INPUT C$
734 IF C$="Y" THEN GOTO 1
736 PRINT AT 10,12;"BYE"

```

THOUGHT, LISTERS will enjoy reading
the following

Soviets Fight Computer Commies

Moscow (AP) — Computer buffs are dealing in black-market programming and playing "Rambo" as well as other anti-Communist computer games because finding Soviet-made software is nearly impossible, a newspaper said.

"If it's hard to buy a computer, it's still possible," Komsomolskaya Pravda said in a review of the Soviet computer scene. "But programs are simply not sold anywhere. Without programs, it's just like a tape player without cassettes."

The Soviet Union has repeatedly stressed the importance of broadening the nation's computer culture, but home-size computers remain in notoriously short supply in stores.

Two reporters from Komsomolskaya Pravda

met with officials, programmers and hackers, known as "sinklerists" apparently after the British-made Sinclair computer.

One sinklerist showed them a list of 277 computer programs that he was selling for five rubles (about \$8) apiece. "There was not one nationally made program," they said.

Because of foreign-made programs that have been copied, Soviet children can play "The Battles of 1917" or pretend they are the anti-Communist crusader "Rambo," the daily said.

In another computer game, "Raid on Moscow," they can obliterate strategic targets in the Soviet Union while dodging fighter-interceptors and anti-aircraft fire, the paper said.

ZX81

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COPY A BLOCK OF THE SCREEN
John Pazmino

Occasionally you'll want to copy to paper only a boxed-off section of the screen, not the entire screen as by doing COPY. The demo here for the ZX-81 does such a block copy.

The headend lines put up a display of random chars and then asks for the bounding rows and columns of the block to be copied. They call the actual block copy subroutine in the 1000 band of lines.

1010-1020 set up a double loop over the rows (R) and columns (C) with limits A,B and X,Y, respectively. 1040 puts the cursor at the position R,C.

1050 PEEKs the sysvar DF_CC at 16398-16399. This fetches the address in the display file corresponding to the cursor position. Next, it PEEKs this address for the code of the char residing at this position. And then it LPRINTs the CHR\$ of this code.

1060-1080 close the loop over R, LPRINTs to throw a line after LPRINTING all the columns in a block row, and closes the loop over C.

For Spectrum or TS2000 line 1050 is LPRINT SCREEN\$ (R,C);. Line 1040 is omitted. Remember, tho, that SCREEN\$ ordinarily recognizes codes 32 to 127 only.
###

Problem Spectrum Software: (PAUL Donnelly)

Rasputin - will not run on a 2068 with Spectrum emulation.

Inferno - timing problems? - pull up resistor help in some cases.

Ms Pac-Man - Interrupt driven, will not copy with IF3.

Avlon - Same as above.

Way of the Tiger - as above, is in 3 sections. Even after master program is loaded, needs tape input.

Spectrum Test Cartridge (I. Logan) resists IF3

Lords of Time (level 9) - resists IF3 (can be broken)

Interface 3
Data Files

Typical files produced by IF3 are:

TYPE	NAME	START	LENGTH
1. Basic Loader	File_name	Line 10	80 Bytes
2. Screen	Flscreen	16,384	6912
3. Bytes	"FL1"	25,000	38834
4. Bytes (on screen)	"FL2"	18,432	2048

Start Address 20140

```

2 FOR I=0 TO 511
4 PRINT CHR$ (RND*64);
6 NEXT I
8 COPY
10 PRINT AT 21,0;" INPUT TOP R
OU:
12 INPUT A
14 PRINT AT 21,0;" THEN INPUT
BOTTOM ROW:
16 INPUT B
18 PRINT AT 21,0;" THEN INPUT
LEFT COLUMN:
20 INPUT X
22 PRINT AT 21,0;" THEN INPUT
RIGHT COLUMN
24 INPUT Y
26 LPRINT "BLOCK FOR ROWS ";A;
" TO ";B;" AND "; "COLUMNS ";X;"
TO ";Y;"
28 GOSUB 1000
30 STOP
1000 REM LPRINT A BLOCK OF SCREE
N
1010 FAST
1020 FOR R=A TO B
1030 FOR C=X TO Y
1040 PRINT AT R,C
1050 LPRINT CHR$ PEEK (PEEK 1639
8+256*PEEK 16399);
1060 NEXT C
1070 LPRINT
1080 NEXT R
1090 SLOW
1100 RETURN

```

```

T I4BH(YH) > 0IA; ?G?F ?YM=X+?) U
A<R> SK&H PG/ /X0SX- 14J860FR45E
"DBI.S5Z$5*1M EPD7H<18: (0720=2
:R05 UC,E UN8 1B7#0-T?2H6RNDPH?
S>EHT/<M PUG $RNDN7<K7UE+ ,=9 LY+
F87H L&FP; : =0E - : PA->9T>+), 00
+ UDC, ; I8ZRND8H+ /76EFAGDN4U1(E
KZ>B, 18: . = P72B LL?0"0SY<0.2PM
342R MOP/: $G72P JED 9UIOS", U NU>
>"F; 4KLEU05+5/13055 8UR, 2+ 6J
PP M B3 M 2G= "; $>RND74 (=MSPF5C=
B" I B05,X" JG : ?K ->C9< P75Y">6
E" /RVE (9BS; RB) (CX=) (90RNDN+?RY
C2B) , LAYE>FU +U; 6 ( : 4P- I >W01M
5/LRND3I 7U7X, += $ CZ/DN9*(5/$"0
X8E +J>N BGPMKU+P ( : 6I1P13 /$
83." (JW9H;B

```

BLOCK FOR ROWS 4 TO 8 AND
COLUMNS 6 TO 10

```

<M PUG
&FPF
;I8ZR
8: . =
OP/: $

```

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ZX81-T/S1000-T/S1500 CLONE: THE PC8300

Donald S. Lambert

The ad stated: Advanced version of the T/S1000. Will run all prerecorded tapes for Sinclair/Timex 1000-ZX81. I ordered Feb 22; sent a money order for \$35.95 to American Design Components, 62 Joseph Street, Moonachie, N. J. 07074. And received the PC8300 on Mar 06. Today, I sent in a money order for \$46.95 for another PC8300 plus a 16K Rampak.

Perhaps I'd best start with the physical dimensions of the PC8300. The box and the computer both are missing any markings to identify either the computer or the manufacturer. There is molded into the plastic case "made in Hong Kong". I suspect that it was to be sold, and the seller would put on his trade mark and or model number. The computer case (cabinet) is dark ivory or beige and is made of plastic. It does not have any shielding whatsoever. The case disassembles by removing 3 screws and then prying the case apart. There are snap catches molded into the plastic that hold it together. When you lift the top and the keyboard, you will find the cable (16 wire ribbon cable) that connects the computer and the keyboard, and, if you are careful, you can tilt the keyboard back and take out four screws to remove the computer board itself. The case is 11-5/8 inches long by 6 inches wide and 2-1/4 inches high.

The computer board is 10-1/2 inches long and 3-9/16 inches deep with a 7805 regulator heatsink (black) that sticks up 1 inch and is 3-7/8 inches long. The external bus connector is centered on the length of the computer board. The board has 4 spaces for sockets to be installed, if you want to clean out the solder from the holes for 4 2114 RAMS. All of the chips, except the RAM, are mounted parallel to the length of the computer board. There was no attempt to crowd the circuitry to compact the board.

The keyboard has 42 keys, including 2 SHIFT keys and a RESET, and has a LED power-on indicator. The keys have action similar to the T/S1500 but the keys are slightly larger. The RESET key is to the right of the 0 key, and there is a shift key on either end of the bottom row, with the SPACE key between the period key and the SHIFT key. You have to spell out almost all commands since there are only a few, like SIN, LINE NO., and DELETE given. The keyboard is mounted to the computer top cover with molded-in snaplock fasteners so you can get the computer out for repair.

With the computer in working position, all the ports are on the back side. From left to right they are TV, JOYSTICK (9 pin socket), EXTERNAL BUS, MONITOR, MIC, EAR, and DC POWER. The DC Power plug is the kind that has a hole in the center. The power plug for T/S 2068 will fit. A B S O L U T E L Y D O N O T T R Y I T! The reverse polarity will fry the 7805 regulator, at the very least, and damage other things, too. More about that later. Like on the T/S1500, the closeness of the other ports will hinder the use of certain peripherals.

The computer has the following chips: Z80 CPU, c4005 (their

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version of a ULA), AMI 8444 AB ROM, TMM 2016 RAM, SN74LS05N, and, of course, the 7805 regulator. Only the 7805 and the 74LS05 are soldered in. The others are all socketed. And, while it isn't a chip, the board has a speaker mounted on the near right hand end.

The external bus is given in the manual, in English. All the bus call outs are the same as for the ZX81, T/S1000, which I checked against one of my books.

I would have liked to give you a detailed tour of the keyboard, but I pulled a bonehead. The power pack that came with my compouter was to be used on 220 VAC, so I was thinking and noticed that the power plug on my T/S2068 would fit. I checked the polarity, but I misread or crossed the VOM probes. Any way, when I powered up nothing on the TV, and I heard a faint buzzing. I turned off and shortly I smelled the scorched electronic parts. From that point on, I have been slowly trying to get it up and running. The Z80 is ok, it works on one of my T/S1000, and ditto for the RAM. I had no way, for sure, to check the ROM or the ULA; so at that time I didn't.

I got the computer and keyboard out of the case and got the regulator out, cut leads and got the holes cleared of solder and another regulator soldered in place. I rigged up a transformer with two 110 VAC primary windings and wired them up serries adding and soldered that to the prongs of the 220 VAC power supply. I fired up the computer board with the chips out of their sockets and no smoke and LED lit up. Fine, so I unplugged and plugged in the chips, and with the computer board and keyboard loose, on a wood surface, I fired up again. Still no TV action, but a transistor on the computer board cracked open and smoked. Now I need to find a MH9013 transistor, or its equivalent. Either the reversed polarity caused the transistor to fail and to go when I powered up, or else the the circuitry on the bottom of the keyboard touched something on the computer board and shorted out.

Now I am trying to find a replacement transistor and what I may have to do is to remove, as carefully as I can, the other MH9013 transistor and use a transistor checker to find out what it is NPN or PNP, and maybe the gain and whatever else I need to know to find a replacement. A friend has told me that a 2N2222 or its compliment will very likely work. But before I try to remove the transistor I will see if it can be checked in circuit.

The PC8300 looks like an attempt to duplicate the T/S1000, but different enough to avoid lawsuits. The more I looked at the computer board, the more I thought that the board was enough like the T/S1000 for the ROM and the ULA chips to work. I tried that and I may have blown the chips, but I feel the pinouts are very likely the same. I have ordered another PC8300. I will be very careful next time.

I had received a letter from a T/S friend the day after I received my computer, and he stated that he had ordered one. When I blew mine I called him up to warn him, but he already had his up and running. He had ordered his with the 16K rampak and it all worked. The rampak looks like the Timex 1016 except it is

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white. His computer came with a 110 VAC power supply.

He tried to load in some programs and he found that all basic programs loaded, all right, but machine code puts the computer in a cycle, printing out the last few lines of the program, clearing the screen and repeating. RESET would not stop or clear the program out of the computer, he had to pull the plug to get control again.

THE PC8300: A CLONE OF THE T/S1000

Part 2 AND THE AUTHOR LEARNS MORE.

I had opted to remove the MH9013 transistor, and I had purchased a solder sucker at Radio Shack. I removed the transistor that I thought was good, and checked it on the transistor checker, and found it was NPN. Digging out my stock of spare parts (my wife thinks that I have a junk yard in the basement), I found a stock of 2N2222A transistors, a couple hundred. I selected several with adequate lengths and checked them and found one dead and pitched it. The others seemed to be of the same level as the MH9013. A pin vise and a 1/32" drill, followed by a drill of 0.039 diameter, cleaned the solder out of the holes so the transistor leads went in easily, and I carefully soldered the connections. With the chips still out, I powered up and the LED power-on indicator came on, and no smoke. I put the chips in, and, with a piece of cardboard to insulate the bottom of the keyboard, I powered up and got a series of beeps but nothing on the screen, and then silence. Subsequent handling flexed the keyboard connector cable enough that the wires parted at the circuit boards. I shelved the unit for later repair.

The second PC8300 that I ordered March 9th arrived Friday the 20th and I got lecture number XXX (not the first time obviously), from my little helpmate about the fact that I was getting far too much stuff (computers) and spending far too much time in the basement playing with said too much stuff. How can one that stands an even 60 inches be so aggressive? I saw that I was on thin ice, so I waited till after supper was over, and I had helped with the dishes, and finished packing my lunch to take to work the next day before I disappeared into the basement.

Yep, I got the 2nd computer and the 16K rampak. However, while I was getting the PC8300 out of the foam box, I turned it over and got a tinny rattle and I felt something sliding inside the computer. I considered that if I sent it back I would be three weeks to a month before I get a replacement, if I got one.

I carefully tilted the computer and decided that the rattle wasn't a loose chip and was bigger than any other component that I could think of, so I carefully opened the computer up and found the friction fit cover of the video modulator had come off and was rattling around. I pressed it into place, and saw that the chips appeared to be firmly in their sockets, and closed up the computer, carefully set it up and turned on the power.

I heard two beeps and the screen came to life, in inverse video, with a statement at the top left side that said READY and a flashing cursor in the bottom left corner. Each key stroke gave an audible beep that was slightly different toned for each key. I had an incomplete statement entered when I pressed the enter key and got a low pitched "growl", and the computer gave a sort of syntax error. But the manual was still in Chinese, with maybe 1/4 to 1/5 in English, and lots of puzzles to sort out. However, it is so similar to the T/S1000 that you could almost use the PC8300 without an instruction manual: except for the twirks that are different.

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When the screen came to life, it was with a black screen with white characters. It came to life on channel 3, and so far I have seen no way to change that, if you wanted to. Also, the signal is much stronger than from the T/S1000, and you can turn the brightness and contrast controls down. The screen seems more stable. The TV cable that came with it had a different connector on the TV end, and there was no TV/computer switch box included with the computer. I used the Timex switch box and cable, since it was already in place.

I typed in some REM statements. (Had to spell out REM) SAVE'd the program and LOADED the program back in. On SAVEing, there is no 5 second blank screen. It goes into the SAVE screen display and gives an OK; line NO. after finishing. I typed in NEW, one letter at a time, and then LOAD and loaded the program back in. I have a 50 Microampere meter and a speaker across the LOAD line from the taperecorder, and I can see the level of the signal and hear the signal while LOADING a program. Instead of a 5 second silence, there is a shrill whistle. The whistle ends and the program begins immediately. I thought something was wrong and I aborted the LOAD, but the LOAD display was still on the screen so I activated the tape player, and without the full five seconds of the whistle, the program LOADED OK.

I knew from checking the signal names on the interface connector that the T/S1000 and the PC8300 were the same so I turned off the power and plugged in the T/S2040 printer and tried it. I had no trouble LLISTing the program that I typed in and later I had the LPRINT command working except that you have to spell them out. Other accessories will possibly work, if the change in the character set doesn't confuse the computer.

I have LOADED in a couple of T/S1000 programs and one game worked, or seemed to, except the character for the vehicle showed up for a letter. I haven't tried to debug the program. I tried to load the PC8300 program on tape into the T/S1500 but it defaulted, but then the T/S1500 has always been fussy about the load level. The tape has a strong signal on it. The 5 second whistle might confuse the computer. A friend, Mike in Muscatine, thinks that the five second whistle is a signal for the PC8300 to recognize its own program and if it doesn't have the whistle then it will translate the program from T/S1000 to almost PC8300 Basic. I will have to experiment and try to find out.

Last night, a friend stopped in and we played with the PC8300 a little and he showed me the way to run off the character set. And when he saw ink, border, paper he thought that it was a color computer and wanted to see the manual where it listed the character set. Comparing the character set as displayed by the computer with the manual, the computer displays ink, paper, border while the manual states that those addresses are not used. See the character set of the PC8300 compared with the T/s1500.

Above one of the keys is the command "LINE NO." and I hadn't figured out yet and Gary suggested that I press shift and that key and at the bottom appeared a number and we tried it a couple of times and what it is is an automatic line numbering

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that increments by 10 and would help to avoid line number problems.

Reset does not work like I thought it would. In fact I don't see a real use for it. I've had the computer go off into the never-never land and there was no way I could get it back without turning off the power. One possible small use is to use it to clear the bottom two lines and it does that without losing what is in memory.

More about the manual. I did not find a Manufacturer's name or the name of the printer and further I did not find any copyright notice nor a part number or book number nor an authors name. It does make you wonder and especially since the manual and the character set in the ROM are not identical. I feel that the lack of identity is a way around copy rights.

The little program given below will print out on the T/S2040 printer the character set. All key punches have been given. The complete program is as either the printer will print out or as the screen will display it after entering. You might have to enter a line like: FOR S=127 TO 255 to see it all.

```
9000 FOR S=0 TO 255      AFTER THE SECOND 5 PRES ENTER.
SHIFTLINE NO. (PRESS TOGETHER) LPRINT CHR$ S;" "; PRESS ENTER
SHIFT LINE NO. (PRESS TOGETHER) NEXTS PRESS ENTER
```

```
9000 FOR S=0 TO 255
9010 LPRINT CHR$ S;" ";
9020 NEXT S
```

You will have noticed that there is no need to put in spaces when you spell out what is a single stroke entry on the T/S1000. When you enter the line the computer adds the spaces as needed and if it doesn't it is easy to edit.

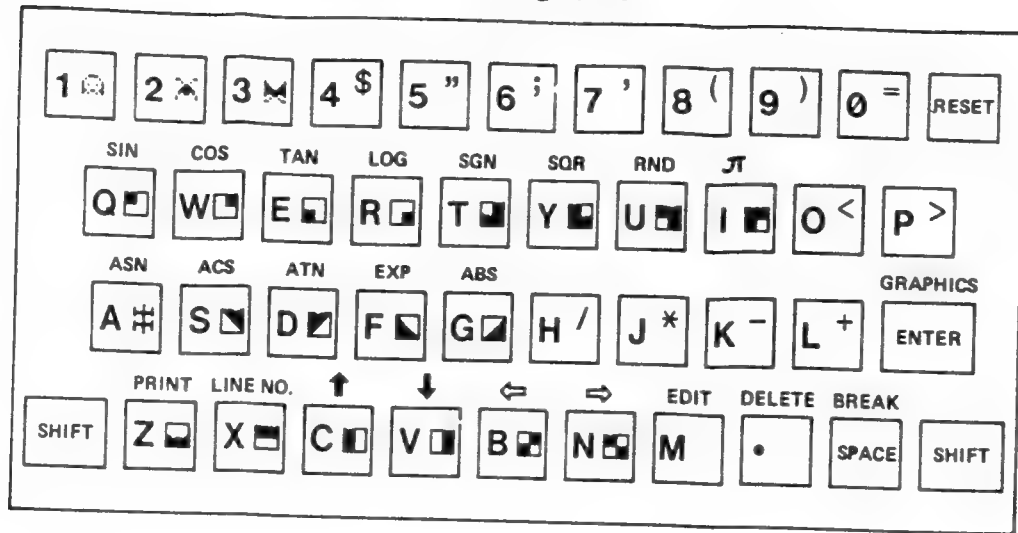
Bob Hoover did state it right: postage does cost money and when I have wrote asking for help or some such I have used a SASE. My wife is quite monetary minded and eyes the letters I write and all is fine as long as the household stamps aren't used for my computer hobby. I will try to answer all letters; however I am into a lot of ten hour days at my work place plus a lot of Saturdays and that does eat into a lot of my time. However, after December I will be another ROC like Oscar.

Next time I will try to work from the XZ81, the T/S1000 and the T/S1500 manuals and the PC8300 manual, I will try to find the areas where the computers differ and give examples.

Donald S. Lambert
3310 Clover Drive S. W.
Cedar Rapids, Iowa 52404

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PC8300 KEYBOARD



记住 shift 键的使用，先把它压住，同时压其他键，不要把数字的 0 和字母的 O 相混。

PC8300 & T/S1500 CHARACTER SETS.

```

0000 REM T/S1500
0000 FOR S=0 TO 255
0010 LPRINT CHR$(S);
0020 NEXT S

```

```

0000 REM T/S1500
0000 FOR S=0 TO 255
0010 LPRINT CHR$(S);
0020 NEXT S

```

```

+-----+
| 1 2 3 4 5 6 7 8 9 0 |
| Q W E R T Y U I O P |
| A S D F G H J K L |
| Z X C V B N M . |
|-----|
| 1 2 3 4 5 6 7 8 9 0 |
| Q W E R T Y U I O P |
| A S D F G H J K L |
| Z X C V B N M . |
|-----|
| 1 2 3 4 5 6 7 8 9 0 |
| Q W E R T Y U I O P |
| A S D F G H J K L |
| Z X C V B N M . |
|-----|
| 1 2 3 4 5 6 7 8 9 0 |
| Q W E R T Y U I O P |
| A S D F G H J K L |
| Z X C V B N M . |
|-----|

```

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+-----+
| 1 2 3 4 5 6 7 8 9 0 |
| Q W E R T Y U I O P |
| A S D F G H J K L |
| Z X C V B N M . |
|-----|
| 1 2 3 4 5 6 7 8 9 0 |
| Q W E R T Y U I O P |
| A S D F G H J K L |
| Z X C V B N M . |
|-----|
| 1 2 3 4 5 6 7 8 9 0 |
| Q W E R T Y U I O P |
| A S D F G H J K L |
| Z X C V B N M . |
|-----|
| 1 2 3 4 5 6 7 8 9 0 |
| Q W E R T Y U I O P |
| A S D F G H J K L |
| Z X C V B N M . |
|-----|

```


LIST

TIMEX 1000 CLONE

By Ken Duda

If you own a Timex/1000 or ZX-81, then you must remember all the things you wished Timex or Sinclair would have done to improve the ZX-81/1000. Well about a month ago I saw an advertisement in a magazine for a PC 8300 computer. They had claimed it would run on all Timex/ZX-81 software, among other things. Being only \$ 29.95 I thought how could I go wrong.

After a few weeks I received the PC 8300. And to my surprise, after opening the box it came in, I found this little jewel to be made in CHINA. The instruction book that came with it was in both Chinese and English. The computer itself had undergone some major changes. A little to late for some of us, but not for some group's that are still heavy into the ZX/1000.

The first thing that strikes your eye, is the case. Instead of the small square black case with membrane keys, you will now find a case that looks very similar to the Timex/Sinclair 2068, including the chiclet type keys. It is cream colored with green keys. There are no longer any connections on the side. Everything is to be found on the backside, starting from left to right (looking at the rear), DC Power, EAR, MIC, MONITOR, EDGE CONNECTOR (dead center), JOYSTICK PORT, TV plug.

I started out by using the Monitor plug and composite video monitor. After plugging in the power supply, I was greeted with a message in the top left hand of the screen. One word "READY" white letters on a black background (inverse screen). After playing with it for about a half hour or so I found the following. The only single key functions left are the math symbols, all others must be typed in. It has a line number key, for example, type in 10FORA=1TO20---press ENTER, and when it goes to the top of the screen you will see, 10 FOR A=1 TO 20. All spaces have been added for you. Now press the Line Number Key and a 20 will appear, ect.

It has a RESET key top right side of the keyboard next to the power on LED bulb. All Graphics symbols are located on the last three rows of keys, instead of the top. No more shifting to get the proper graphics, what you see is what you get. The arrow keys are at the bottom center row of keys, and the Joystick port I mentioned early on, is tied into them. (no stick command) It even has a built in programmable speaker. And I might add, that its pretty loud. They give example's of some songs that can be played in the manual.

The keys themselves give a BEEP sound as you press them when typing in a program. The top row of keys give the higher pitch, low row lowest. You can turn it off by just typing in "NOBEEP" and ENTER. If you still have your old 16K RAM pack, just plug it in, it will work. And it won't crash like the old ZX/1000 did. The ram pack does not touch the table surface, and is a very tight fit. There is more, but I think I'll give someone else a chance to write about it. If your interested in getting one, the address is as follows:

American Design Components, 62 Joseph Street, Moonachie,
New Jersey 07074, telephone (800) 524-0809

MORE BANK SWITCHING? EGAD SIR!

Bill Pedersen.

At the very beginning, when I poked my stick into the hornet's nest of the mysterious TIMEX extended bank switching system I warned people that they should "test, not guess".

What happened? Everyone scurried around looking for some or other "expert" who was expected to provide them with all the answers with none of the work! That is FUN? I have a better name to call it, but in the interest of harmony I will refrain.

I also made it clear that I refused to be an "expert" in that limited sense. I was willing to throw the ball into the court, but I'll be darned if I shoot their baskets for them.

After some conversation, Nazir convinced me that another try might just, maybe, do somebody some good.

I have this to say. If you don't have the willingness to test what is presented, don't expect to be listened to seriously.

S D R A W K C A B

Spell it backwards because that is the best way to look at the situation when it comes to extended bank switching.

There is something attached to your computer buss. How in blazes can you tell? Obviously it must do SOMETHING. What?!! When you yell "HEY THERE" (symbolically of course) it is expected to reply "URK", or "DON'T BUG ME", or what it really does to assure enough processing time: it issues a short WAIT pulse as it gets ready to complete the READ or WRITE command.

If there is no WAIT pulse, either nobody is home, or a snob is resident who thinks he's faster and better than the CPU.

Every attached memory MUST HAVE an address different from all others. Memory will be assumed to be 256 PAGES of 64K, each one subdivided into eight 8K sections. Actually this is the total memory address space. With the present bank switching protocol, only 127 PAGES in this space can be accommodated.

CHUNKS apply to all of address space, though not implemented in HOME bank.

Where do we get the extra bits to extend the address so these are all different?

Right question. Wrong order. Get the drift?

The attached memory MUST be equipped to decode addresses that big. We MUST supply them...somehow.

When in doubt, make a list. We'll call up each PAGE in turn, using only the address extension. If something answers, we add the address extension to the list. When we're through, the number of entries is MAXBNK! This whole operation is POLLING.

That can be a lot of devices to keep track of! Fortunately it only needs to be done once, unless we change what's connected.

(RESET * redoes the whole list, RESET # n is specific.)

I WARNED YOU It is logical, but doesn't work in the long run

LIST

only needs to be done once, unless we change what's connected.
(RESET * redoes the whole list. RESET # n is specific.)

I WARNED YOU! It is logical, but doesn't work in the long run when you bump into handling interrupts. It is actually necessary to repoll the memory later to establish the interrupt priority...and other types of polls are done too.

Finding the source of an interrupt, and reading status are in the latter category.

For now we have a "monotonic" list. That is, it is in order of increasing actual address extension.

(Normally this is stored in a small RAM)

Though it is entirely out of sequence, it should be mentioned that the TS2068 keeps track during the polling and keeps another list known as SYSCON.

The Z80 CPU can only address one page at a time. This is divided into eight CHUNKS of 8K each. That is all there is. There ain't no more address space available to it. As I said at the very beginning of my series; you have only eight rooms, but any tenant can occupy each one. The tenants are any of the MAXBNK PAGES, HOME, EXROM, or DOCK.

Hold it right there! You mean that out of all those tenants there's at best only room for eight? Hmmm...seems so. Uhhh...only eight leases, right? It seems we have us another table, a table of chunk "owners". How about that? A new table called the Current Chunk Owner Table. (CCOT for short)

Actually, just like a real estate agent, the TS2068 doesn't let anybody outside in until the apartments are ready. All the CHUNKS are kept LOCAL.

For now, we'll assume that the TS2068 has finished sorting the RAM table in interrupt priority sequence. The position of each PAGE in this table is now a symbolic bank number BNKNM. Given the bank number you can now look up the actual address. The table is no longer necessarily monotonic.

The "owners" now have symbolic bank numbers, just as channels have symbolic stream numbers.

There are eight registers and a 3 to 8 line selector in CCOT. Each register corresponds to a CHUNK and contains the symbolic bank number of an owner. If that number is 0, then one of the local banks owns it. (HOME, EXROM, or DOCK)

The 3 to 8 line selector decodes which chunk is being addressed, using A13B, A14B, and A15B of the Z80 buss.

Now I give you a question which you should be able to answer.

What value is stored in the first byte of the PAGE RAM? The answer is 0 of course, but why?

How do you write to PAGE RAM? See the BS Command Protocol. It happens twice. Once to initialize, again to sort.

Figure 1 is a simplified diagram showing how the Z80 address is converted to a PAGE address with minimum response delay. No unnecessary processing is done.

LIST

Have you noticed that we have gotten this far without looking at one single bank switching command? I am sure you recognize that such are needed. Perhaps for the first time it will make a bit of sense what they really do.

Obviously there are no HS registers! The WRITE HS REG command really just writes the currently SELECTED bank number into the registers of CCOT corresponding to the bits in the HS byte.

Isn't that what it must do?...to work? (Where's that expert?)

CCOT is that great enlightening secret I was hoping someone would discover after taking up my challenge. Ah well...

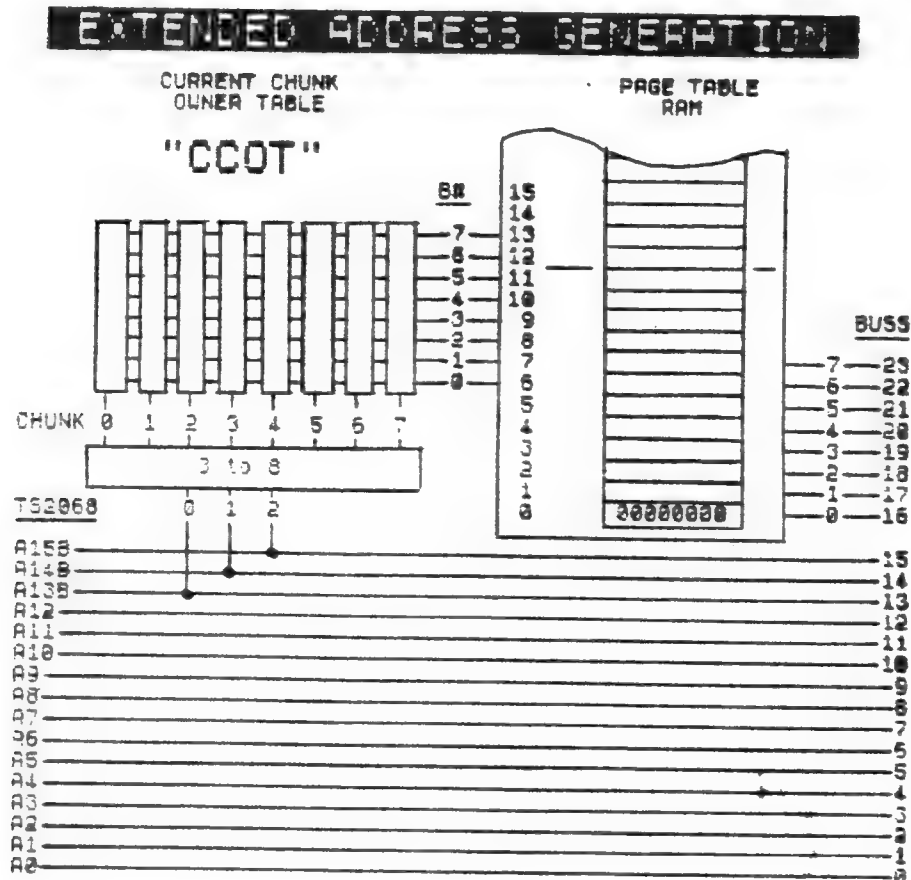
The figures are from my seminar at MWTSCF on bank switching. The entire presentation will be available in print by the time this is published.

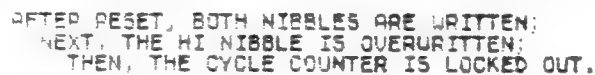
Each figure highlights some phase of bank switching. That for SYSCON should be of special interest. None of Dr. Watson's data was needed in the preparation of this chart. The chart was prepared entirely from analysis of existing, but blockaded code.

© 1987 William J. Pedersen

⇒ Not fair Bill.
You should have
provided the
description!

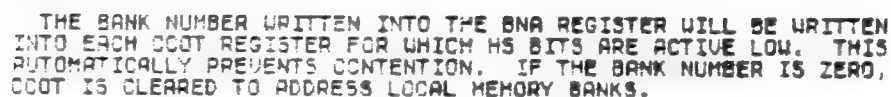
Figure 1:





A READ CYCLE IS SIMILAR, EXCEPT THE DATA BUSS IS UNDER THE CONTROL OF THE BANK SWITCHING UNIT.
BE IS ISSUED AND BUSS DATA IS ISOLATED FROM THE CPU.

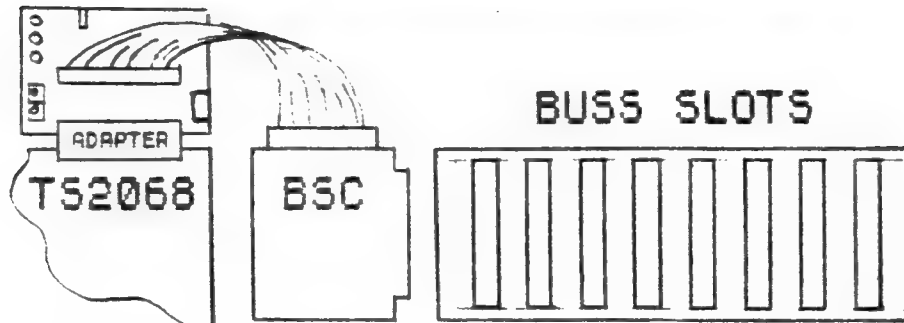
Figure 3: WRITING TO LOG



LIST

Figure 4:

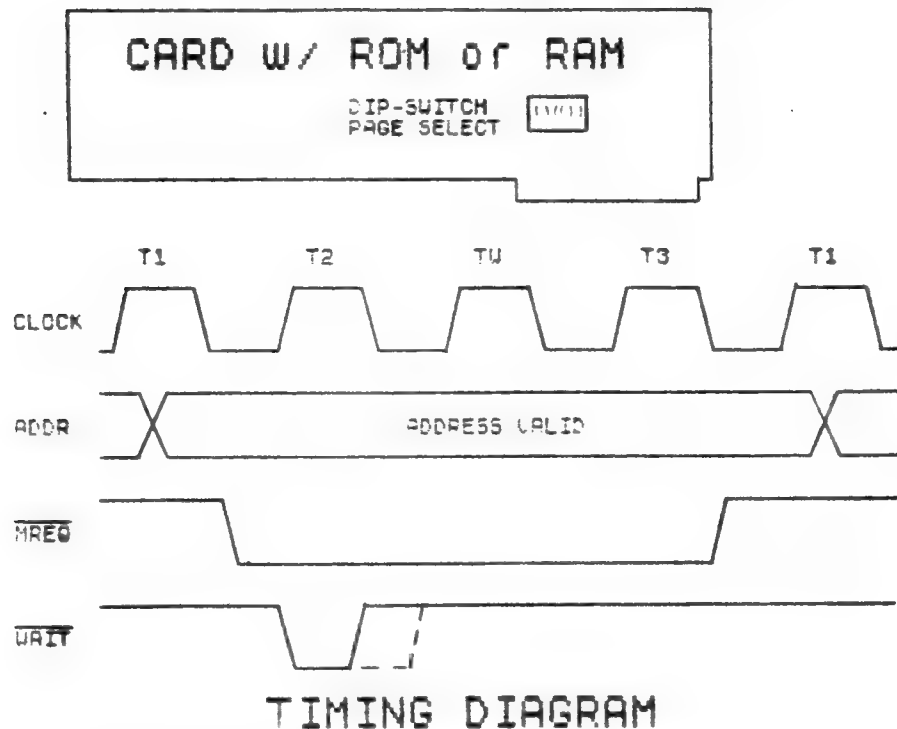
BANK SWITCHING HARDWARE



The motherboard has power jumpers between slots to permit the division of load on the TS2068 and an external supply. Pin assignments are partially compatible with the PC, and can be made to operate some clone cards with additional provisions on the bank switching controller card. A standard is needed.

Figure 5:

EXPANSION MEMORY



The WAIT signal must be issued whether needed to delay the CPU or not. When polling, clock cycles are reduced.

UNIVERSITY OF CALIFORNIA, BERKELEY

[illegible]

```

SYSCON (23740)=24290
NOTES: 1 R to R RESET buffer
        2 P Untouched old CHUNK MASK if present
        3 S Complement copy of %
        4 % Byte used to test for RAM
        5 B Normally EOT byte

```

SYSCON FORMATS

350

PAGE

```

23 INTERRUPT PRIORITY ..... P0015h
22 BOOT PRIORITY (HOME=128) ..... P0014h
21 Bit0 set if Bootable, Bit1 set if SLVM capable ... P0013h
20 msb RESET ..... P0012h
19 lsb ROUTINE ..... P0011h
18 msb BOOT ..... P0010h
17 lsb (INIT) ..... P000Fh
16 msb INTERRUPT ..... P000Fh
15 lsb ROUTINE ..... P000Eh
14 msb SLVM Param=Token ..... P000Dh
13 lsb CFME Param=Token ..... P000Ch
12 (Function not known. Space was opened for this.) ..... P000Bh
11 msb OUTPUT Param=0,STRAND (SYSVAR 23750 Bit0=0) ..... P000Ah
10 lsb ROUTINE ..... P0009h
9 msb INPUT Param=0,STRAND (SYSVAR 23750 Bit0=1) ..... P0007h
8 lsb ROUTINE ..... P0006h
7 lsb SELECT ..... P0005h
6 msb (shared msb) ..... P0004h
5 lsb CLOSE ..... P0003h
4 msb OPEN Param=(Keyword,Value), ...] ..... P0002h
3 lsb ROUTINE ..... P0001h
2 DEVICE CHR0 or CHUNK MASK if RAM ..... P0000h
1 BANKNUM (Bit7 set if not sorted, =0 after sort.) .....
0 =2 if RAM, =1 if ACTIVE, =0 if INACTIVE .....

```

1100

DOCK

```

3  CHUNK MASK ..... 0004h
2  msb START ..... 0003h
1  lsb ADDRESS ..... 0002h
0  =1 if LRO3 present ..... 0001h
    Not used. Reserved ... 0000h

```

11

```

7  #b  BUFFER                      0007h
8  #b  SIZE                        0008h
9  =1 if AUTOSTART, =0 if not ..... 0009h
10 #b  CHUNK  MASK (active low) ..... 000Ah
11 #b  START                       000Bh
12 #b  ADDRESS                     000Ch
13 =2 if AROS present .....         000Dh
14 =1 if BASIC, =2 if M/L only ..... 000Eh

```

```

NOTES:  1  -B8 if RAM
        2  RAM RESET Test Byte
        3  PAGE address extension
        4  INTERRUPT HANDLER, 16 bytes, p0030h thru p0047h
        5  SC(11) IS used as a buffer during RESET. This limits
           13 use to RAM.
        6  SC(n,0) and SC(n,1) are supplied by the T52065. The
           rest are copied from the SOURCES listed.

```

LIST

REVISED REVIEW: SPECTERM-64 Ver.4.0 & 4.1

by Pete Fischer

This program first appeared as a commercial program in England where it is widely used on the Spectrum. Grey & Clifford Computer Products obtained the rights to sell it in the U.S. as modified for the 2068. Version 4.0 ran only in Spectrum mode. There are both Spectrum & 2068 versions of 4.1.

! NOTE: I originally reviewed this software in Ver.1.0 of "The T/S Guide to Tele-
! communications". Much of that review proved erroneous. Please read this carefully!
!

The big news here is Telecommunications at 1200 B.P.S. on the 2068. This is the ONLY way to achieve that speed on this computer. How can I describe 1200 B.P.S.? Well, let me put it this way, if you bought a magazine and could only look at 10 sq. inches at a time and had to read the ENTIRE MAGAZINE in sequence- that's 300 bps. But 1200 is like skipping through till you find the part you want and THEN stopping to read. It's much more satisfying and efficient.

It also puts Long Distance telecommunications in a "whole other dimension". As I mentioned elsewhere, an Xmodem transfer at 1200 BPS takes ONE EIGHTH the time of HEX transfer at 300 BPS; with the additional benefit of error checking. Once you begin serious downloading, you will truly appreciate this!

The second big feature of this software is it's versatility which is manifest in a block of 7K designated as a permanent BASIC component. That is, permanent all the time you're online, it doesn't get erased the way the MTERM II buffer does. However, you can easily change it, just by loading a different version. What good is that major block of memory? Well one PRIMARY use is to interface the program to YOUR mass storage, WHATEVER that may be: Microdrive, Disk Drive or Ramdisk (coming soon).

The next major use is to interface a WIDE range of modems which is particularly easy with the use of the Z-SI/O Card, but also possible through other RS-232 interfaces.

What else? Well there have been a wide variety of utilities written for MTERM over the years, all squeezed into small blocks of memory left over by accident. The 7K block in the Specterm software is a LARGE BLOCK by comparison. In it, you could easily put printer drivers, RLE decoders, auto-save routines or a number of other utilities ALL AT THE SAME TIME!

Those routines used to I/F the mass storage and modems are called "OVERLAYS", and were developed by CP/M programmers to allow easy modification of a program without divulging the SOURCE CODE. When you buy Specterm 64, what you're buying is the CODE. But packaged with it, as a convenience, are some examples of these OVERLAYS.

In my first review, I said, quite negatively, that you need to enter a long BASIC statement in order to check the buffer. That was ABSOLUTELY FALSE! You can simply incorporate this statement into the BASIC component, and thus, easily check the buffer, simply by escaping to BASIC. In fact, this routine is provided in the stock tape as it comes from Grey & Clifford. I had simply failed to load that Overlay.

This terminal generates 64 columns WITHOUT the use of the OS-64 cartridge. This in itself turns out to be a big feature.. Nearly all BBS' are configured for 80 col., and while it isn't perfect, 64 col is MUCH CLOSER. A monitor is pretty essential, one I bought for \$30 worked perfectly. The character set has been designed for readability (better than Tasword, I think). Once you get used to 64 Col, it's difficult to go back to 32 col for terminal work. It DRAMATICALLY increases the amount of information on the screen at any one time. All too often, at 32 Col., by the time you get to the bottom of a menu, the top has scrolled off the screen. This NEVER happens in 64 col. In addition, the ARRANGEMENT of the menu makes more sense, and is easier to follow.

In my original review, I decried the lack of an 80 col printing facility. Besides the potential to add one through the 7K BASIC area (as Tony Gomez has recently done), the standard buffer saves are completely Tasword2 compatible. Although they may be

LIST

too long, it's easy to break them up with Unloader, then simply load them into Tasword and print from there.

Also, in my original review, I stated that , upon downloading it was impossible to tell if the transfer was successful or not. THAT WAS ALSO INCORRECT. The blinking "R" on the screen tells you it's a successful transfer.

Another mistake I made in my first review was when I said, "If you forget the CAPS LOCK and enter a lower case letter in command mode... you must then reboot the program." Not true at all!

If you make the above error, it will simply refuse the command until you use a capitol letter. It WILL lock-up and need rebooting if you go offline (using the 2050 modem) and fail to immediately escape to BASIC. However, once you understand this, there's no problem.

Since my original review, I've put this program through a great deal of testing- spending hours and hours online & making file transfers (over 100) of all descriptions. I moved MAC files, AMIGA files, IBM files Text files and Etc. It worked beautifully. There WERE failures, but none I couldn't eventually trace to operator error or Host error. The trick to moving files on foreign computers is this: don't save/load it. Call board A, D/L, disconnect, call board B, and U/L. As I said, I did this MANY times with great success.

One feature I grew to like more and more was the speed of the keyboard. The keyboard scan routine on MTERM is a very slow one. Put mildly, it's a pain. I can, and frequently do, out-type it. But the joy of Specterm is that you can type MUCH faster. This is great on L.D. calls. Specterm also gives you "audio feedback" for each keypress. I really missed it when I went back to other terms. My experience showed that ver 4.0 was a bit TOO fast, but both versions of 4.1 are adjustable so you can select the speed you want. Both new versions also allow for color control of the screen.

One of the BEST things about this program is the certainty of future support. You will be hard pressed to find two people who are more knowledgeable and have done more for T/S Telecommunications than Ed Grey and Dave Clifford. Their support is available both by voice and by modem- the latter in the form of the TIMEXCHANGE BBS. They and fellow users are currently working on utilities to enhance the program and are available for download free from the TIMEXCHANGE.

So, The big reasons for going to Specterm 64 are these:

- 1) 1200 BPS Communications, the ONLY way to do this on the 2068
- 2) Tremendous versatility in the form of a wide-open 7K BASIC component thus enabling direct access to YOUR mass storage device and/or a wide variety of modems.
- 3) VERY active continued support for the system with new utilities & additions all the time- available on the TIMEXCHANGE BBS.
- 4) The size of the buffer :31.487K
- 5) Better display and no need for the OS-64 Cartridge.
- 6) A Faster keyboard (the newest versions let you adjust the speed)
- 7) Allows you to use nearly ANY RS-232 modem (the industry standard) when used with a Z-SI/O Card.

I HATE to see a good product maligned by poor reviewing and hope you will understand my error in rushing v 1.0 to print.

The main differences between ver 4.0 and the 2 v.4.1 (Spectrum & 2068) are these:
A) 4.0 is Spectrum only B) 4.1 allows you to adjust the keyboard speed and screen color (not true of 4.0) C) The new versions have "RELAXED" Xmodem which allows them to work through PC Pursuit. If you own ver 4.0 and want to upgrade to the SPECTRUM v.4.1, it will cost you \$5 even. If you want the 2068 v.4.1 it will cost \$30+ \$2 S&H. The Program is available from RMG, SUNSET, Variety Sales, or Grey and Clifford Computer Products/ POBox 2186/Inglewood, CA 90305 (213)759-7406

LIST

LETTERS

TIP FOR USERS OF MSCRIPT WORD PROCESSOR

You may have noticed that using the >@x/1 command to print a special character that does not appear on the keyboard, messes up the right justification! Like this:

Let us assume that you need to print the ^ character, which might mean in a computer program "raise to the power of...". See how the use of this ^ character has messed up the right justification? Incidentally, I have of course in the beginning of the typed text entered the command >@x=94/1 in the Format line, where x is any number between 0 and 9. the number 94 is according to the instruction manual of my Star SG-10 printer the decimal code for the ^ symbol. To correct this, add another command >@y=127/0 in the Format line, where 127/0 is a non-printable command (again for the SG-10 printer) for DEL(etc).

Now, any time you have to use a print-command for a special character, just enter a SPACE behind the <funct>Gx command and THEN ENTER THE <funct>Gy command.

Let me demonstrate that this will indeed correct the justification problem! Let us again assume that you need to print the ^ character, which might mean in a computer program "raise to the power of..." See how the use of the extra DEL-command has eliminated the justification problem previously caused by the use of the printable special character ^? For every use of such a character, just enter an extra space, immediately followed by the DEL command.

Cedric R. Bastiaans

HELLO FELLOW FRIENDS OF L.I.S.T.

I'VE BEEN VERY BUSY WITH VER. 2.0 OF "THE GUIDE TO T/S TELECOM." AND COULDN'T WRITE AS USUAL, THE LISTING EDITOR & WRITERS DID AN "EYE-OPENING" JOB ON THE QL MARKET! AS MUCH AS I LIKE THE QL, I HOPE YOU WILL FOLLOW THE LEAD OF THE CAPITOL AREA GROUP AND "BEND OVER BACKWARDS" TO CONTINUE YOUR SUPPORT FOR THE 8-BIT MACHINES.

IN THAT VEIN, I AM ENCLOSING AN ARTICLE I'D LIKE YOU TO PUBLISH. IN VERSION 1.0 OF THE GUIDE, I SAID, "IF YOU TAKE ISSUE WITH ANYTHING IN THIS GUIDE, PLEASE DO SO IN THE WIDEST FORUM YOU CAN ACCESS..." I AM "TAKING ISSUE" WITH MY OWN REVIEW OF SPECTERUM.

VERSION 2.0 OF THE GUIDE WILL BE RELEASED AT THE FEST. BECAUSE OF IT'S INCREASED SIZE, I ASKED PEOPLE IF THEY'D RATHER HAVE A PARTIAL Ver 2.0 FOR \$5.00. OR A COMPLETE ONE FOR \$7.99. EVERYBODY TOOK THE SECOND OPTION SO WE WILL GO WITH A COMPLETE VERSION AT \$7.99. I KNOW LIST WILL BE REPRESENTED AT THE FEST, I'M SURE THEY'LL BRING SOME HOME WITH THEM.

THANKS FOR YOUR SUPPORT,

Adios PHOENIX PETE!

PHOENIX PETE: I am wondering why will you get the idea that we are quitting, and not supporting 8-bit machines. Is this issue (May-June) any indicator of our non-support? Presently our membership own QLS to the extent of 35-40%. But all of them also own TS2068 & ZX81. We like the QL. We love our 8-bit machines. The editor.

SEE
P.20

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SRAM HI-RES EXTENDED BASIC

LIST

- *SPRITES*
- *64 COLUMN*
- *WINDOWS*
- *VIDEO REVERSE*
- *RECTANGLES*
- *PLOT POINTS*
- *COPY*
- *FLASH*

→→→→→ WELCOME TO ←←←←←

RUN	CLEAR	CLS	RETURN	PLOT	UNPLOT	COPY	SAVE
LOAD	PAUSE	LIST	LLIST	PRINT	REVERSE	POINT	LOCATE

SRAM HI-RES

by GREGORY C. HARDER
and
FRED NACHBAUR

ZX16 Core routine developed by WILF RIGTER

Copyright, 1986

↑!←~—)(&

- *DRAW LINES*
- *FAST-SAVE*
- *BIT-SCROLLS*
- *CIRCLES*
- *TRIANGLES*
- *INVERT*
- *UDG's*
- *LOWER CASE*

This 4K package of machine-code routines extends the power of your computer by allowing you to program high resolution applications ENTIRELY IN BASIC. With its 38 new commands, your ZX81/TS1000 or TS1500 screen displays are now only limited by your imagination.

HI-RES ZX81 GRAPHICS

Yes! 64 columns, and Hi-Res on the screen. See the screen examples on top and to the side. You do need a modified 8K Hunter board (mapped in the 8K-16K area) or you can buy an 8K CMOS memory board for less than \$40.00. If any one of you have used this system please send us your review. On the other hand if we get set our ZX81, we will publish a review in the future. For further information contact:

SILICON MOUNTAIN COMPUTERS
C-12, Mtn. Stn. Group Box
Nelson, BC V1L 5P1
Canada

LISTinG Polley

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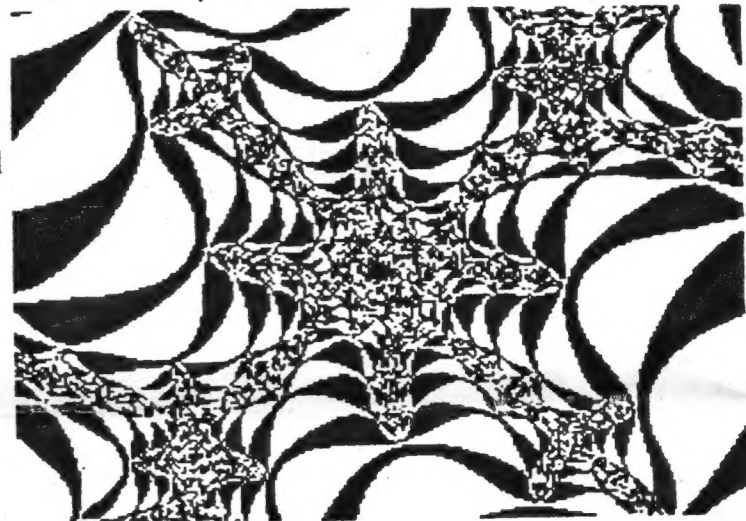
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Please note our new address : PO Box 438, Centerport, NY 11721-0438.

Mail sent to the old address must be forwarded there and will take longer to reach us.



Long Island Sinclair-Timex Group

MEETINGS LONG ISLAND

The Long Island meeting of LIST will be held at 2:00 p.m. on Sunday June 14th at Harvey's Place in Valley Stream.

Southern State Pkw'y Westbound to Exit 155 Corona Ave. Bear left at triangle and travel south on Rockaway Pkw'y., changes name to Rockaway Ave., as it crosses Merrick Rd. Continue past Sunrise Highway 1 block to Roosevelt Ave. make right 1 block to STOP sign. Make left onto Cochran Place, 1 very long block make first right at Pine Lane, 1 block to Peri Lane on left #5 is first house on left. Tel. # 791-6247.

NYC

The NYC meeting of LIST will be held at Mrs. Kim's Deli. on Park Ave., between 21st and 22nd St. at 6:00 p.m. on June 15th. Call Myles C. for info. 212-427-0179.



LIST
P.O. BOX 438
CENTERPORT, N.Y. 11721-0438



TO:

Don
3310 Clover Dr S
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Jan-88

Lambert

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FIRST CLASS MAIL